



**Editorial note.** The WILDCOMS newsletters have changed format and, rather than focus on particular issues or contaminants, will largely report recent newsworthy items and publications from its member partners

### **Carcasses of euthanized animals can kill scavenging wildlife and pet dogs**



Courtesy of Michelle Whitfield/Animis Foundation

Considered one of the most humane for horses, livestock and companion animals, the euthanasia drug sodium pentobarbital (SPB) also has a lengthy history of unintentional secondary debilitation/mortality. Reports of scavenger poisonings including ravens, bears, martens, fishers, lynx and otters first emerged in the late 1980s in North America. In 2010, a dog on a New York State beach was incapacitated after ingesting blubber of a stranded humpback whale euthanized there two weeks prior. Last year, two bald eagles died in Florida, at least a dozen turkey vultures were impaired in California and a tiger, wolf and cheetah perished at a Nevada sanctuary. This is only a snapshot of the true global extent of the issue. We are currently seeking for review both reported and unreported cases from the last decade. Please contact Dr. Ngaio Richards: [ngaio@workingdogsforconservation.org](mailto:ngaio@workingdogsforconservation.org) for more information about collaborating.

### **Cetacean Strandings Investigation Programme (ZSL) and CEFAS (Lowestoft Lab.)**

Recent research on PCBs in cetacean marine apex predators in UK and wider Europe show very worrying findings. PCB concentrations still persist at excessively high concentrations in the blubber of several marine apex predator species across Europe, including killer whales (*O. orca*) and bottlenose dolphins (*T. truncatus*) (Jepson et al 2016). PCBs were banned in the EU in the mid-1980s, but after an initial drop in concentrations following the ban, PCB concentrations have now stabilized across Europe in humans, fish and wildlife. The high PCBs concentrations in European cetaceans are associated with long-term and ongoing population declines across Europe. More specifically, the few remaining killer whale populations in industrialised parts of Europe have very low or zero rates of reproduction and are now very close to extinction.



Copyright CSIP-ZSL

In a second paper we show that PCBs pose a threat to many marine apex predators globally – not just in Europe (Jepson and Law 2016). The killer whale remains the most highly PCB-contaminated species on Earth, with very high PCB concentrations found throughout their range. Other marine apex predator species potentially impacted by PCBs include false killer whales (*P. crassidens*); coastal bottlenose dolphins (N. hemisphere); several “threatened” cetacean species in SE Asia; all marine mammals in the Mediterranean and Black Seas; ringed seals (*P. hispida*) and harbour porpoises (*P. phocoena*) in the Baltic Sea; polar bears (*U. maritimus*) in the Arctic and several apex predator shark species including great whites (*C. charcharias*) and tiger sharks (*S. cuvier*) (Jepson and Law 2016).



In February 2016 we held a public meeting at the Zoological Society of London on high PCBs in killer whales and other dolphins in Europe with 3 speakers (Robin Law; Paul Jepson and Richard Moxon). The meeting was closed by Professor Ian Boyd (Chief Scientist to Defra). The PCB issue was also featured on *BBC Newsnight* the day after the ZSL meeting. More work is urgently needed to mitigate PCB contamination of the marine

environment and to comply with the Stockholm Convention that requires the reduction and eventual elimination of large sources of PCBs and other persistent organic pollutants – both in Europe and in other parts of the world.

The new cetacean PCB data in Europe has quickly fed into various international scientific/policy fora. These include the Working Group for Marine Mammal Ecology (WGMME) and the Working Group for the Biological Effects of Contaminants (WGBEC) of the *International Council for the Exploration of the Seas (ICES)*. The ICES continues to provide scientific advice to the *Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR)* - including EU compliance with the *Stockholm Convention*. The ICES WGMME report (2016) concludes that PCBs pose the single greatest threat to bottlenose dolphins and particularly killer whales throughout the Northeast Atlantic region.

#### References

- Jepson, P.D. and Law, R.J. (2016) Persistent pollutants, persistent threats: Polychlorinated biphenyls remain a major threat to marine apex predators. *Science* **352**: 1388-1389. doi: 10.1126/science.aaf9075
- Jepson et al. (2016) PCB pollution still impacts populations of orca and other dolphins in European waters. *Sci. Rep.* **6**, 18573; doi: 10.1038/srep18573

### GB Wildlife Disease Surveillance Partnership Quarterly Reports

Please find below links to the quarterly reports of GB wildlife disease surveillance produced by the **GB Wildlife Disease Surveillance Partnership**:

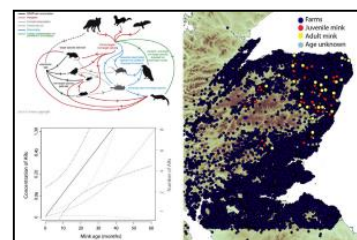
- 2016 reports: <https://www.gov.uk/government/publications/wildlife-disease-surveillance-reports-2016>
- 2015 reports: <https://www.gov.uk/government/publications/wildlife-disease-surveillance-reports-2015>
- 2014 reports: <https://www.gov.uk/government/publications/wildlife-disease-surveillance-reports-2014>
- Previous wildlife disease surveillance reports are available on the archived AHVLA web pages on the National Archive website:  
<http://webarchive.nationalarchives.gov.uk/20140707141401/http://www.defra.gov.uk/ahvla-en/category/publications/disease-surv/surv-reports/>

**The GB Wildlife Disease Surveillance Partnership is made up of the following organisations:** Animal and Plant Health Agency (APHA) (formerly AHVLA), Scotland's Rural College (SRUC), Institute of Zoology (IoZ), National Wildlife Management Centre of APHA (formerly part of FERA), The Centre for Environment, Fisheries and Aquaculture Science (CEFAS), The Wildfowl and Wetlands Trust (WWT), Natural England (NE), Forestry Commission England (FCE).

### WIIS-Scotland

Recent research involving WIIS Scotland has resulted in a paper examining the rate of exposure of the invasive American mink in Scotland, to anticoagulant rodenticides. Randomly sampled, aged American mink were tested for anticoagulant rodenticides. 78.8% of mink had detectable residues; bromadiolone being the most commonly found. The probability of mink exposure to anticoagulants increased by 4.5% per month of age. Exposure was 1.7 times higher for mink in areas with a high density of farms. American mink are a potential sentinel species for exposure risks across Europe.

Reference.





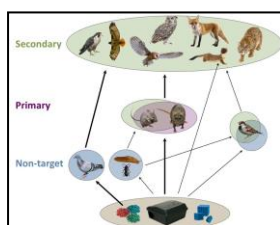
archive generated through the PBMS chemical monitoring programme can be used to address broader ecological studies of these species.

## New publications

**Breed et al., 2015.** Annual Report on surveillance for avian influenza in poultry and wild birds in Member States of the European Union in 2014 [http://ec.europa.eu/food/animals/animal-diseases/control-measures/avian-influenza/index\\_en.htm](http://ec.europa.eu/food/animals/animal-diseases/control-measures/avian-influenza/index_en.htm)

**Brownlow et al., 2015.** Investigation into the long-finned pilot whale mass stranding event, Kyle of Durness, 22<sup>nd</sup> July 2011. Report to Defra and Marine Scotland. [http://randd.defra.gov.uk/Document.aspx?Document=12549\\_KyleofDurness2011massstrandingeventreport.pdf](http://randd.defra.gov.uk/Document.aspx?Document=12549_KyleofDurness2011massstrandingeventreport.pdf)

**Duff et al., 2016.** Feature Article: Wildlife Disease Surveillance by the Animal and Plant Health Agency. In Practice. Bulletin of the Chartered Institute of Ecology and Environmental Management (CIEEM) Issue 91, March 2016, pp 7-11.



**Elliott, J.E., et al. 2016.** Paying the Pipers: mitigating the impact of anticoagulant rodenticides on predators and scavengers. *Bioscience* **66** 401-7. <http://dx.doi.org/10.1093/biosci/biw028> is an opinion paper that discusses the issues associated with widespread contamination of vertebrate wildlife by anticoagulant rodenticides, mainly second-generation forms, or SGARs. Although new risk-mitigation measures for rodenticides are now in effect in some countries, widespread contamination and some

poisoning of non-target wildlife are expected to continue and this paper suggest options to further attenuate this problem.

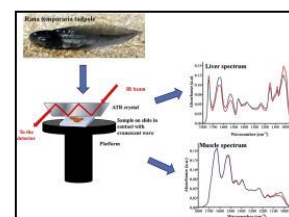
**Heys, K.A., et al. 2016.** Risk assessment of environmental mixture effects. *RSC Advances* **6** 47844. <http://dx.doi.org/10.1039/c6ra05406d> is a review paper that looks at the current challenges facing the assessment of the toxic impacts that mixtures of environmental contaminants may exert. It highlights future areas of focus that seek to develop methodologies, such as infrared microscopy, that may provide new insights into how mixtures of environmental contaminants interact.

**Murphy et al., 2015.** Reproductive failure in UK harbour porpoises *Phocoena phocoena*: legacy of pollutant exposure? *PLoS ONE* **10**(7): e0131085. doi: 10.1371/journal.pone.013108

**Papachlimitzou et al., 2015.** Organophosphorus flame retardants (PFRs) and plasticisers in harbour porpoises (*Phocoena phocoena*) stranded or bycaught in the UK during 2012. *Marine Pollution Bulletin* **98**:328-34. doi: 10.1016/j.marpolbul.2015.06.034

**Strong, R. et al. 2016.** Biospectroscopy reveals the effect of varying water quality on tadpole tissues of the common frog (*Rana temporaria*). *Environmental Pollution* **213** 322-337. <http://dx.doi.org/10.1016/j.envpol.2016.02.025> is a research paper,

produced in collaboration with some of the Predatory Bird Monitoring Scheme (PBMS) team. It highlighted the value of IR spectroscopy as a low-cost, rapid and reagent-free technique for biomonitoring amphibians which are susceptible to environmental degradation. The study showed that IR detected changes in several tissues (liver, muscle, kidney, heart and skin) of late-stage common frog (*Rana temporaria*) tadpoles collected from ponds with differing water quality.



## Contact us:

If you would like to see a particular topic in the WILDCOMS newsletter, contact us about other WILDCOMS related matters, or be added to our mailing list please e-mail the WILDCOMS coordinator Jacky Chaplow (<mailto:jgar@ceh.ac.uk>).

Jacky Chaplow,  
NERC Centre for Ecology & Hydrology,  
Lancaster Environment Centre,  
Bailrigg  
Lancaster  
LANCS  
LA1 4AP